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name Examiner Dennis Rosario

company U.S. Patent & Trademark Office

fax number (571) 273-8300

NEEDLE & ROSENBERG PC
999 PEACHTREE STREET NE
Suite 1000
ATLANTA, GEORGIA 30309-3950
678-420-9300
NEEDLEROSENBURG.COM

from Dawn V. Stephens

our reference no. 05145.0009U1

our fax number (678) 420-9301

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Meeting with Patent Examiner D. Rosario-Vasquez & Examiner B. Werner
Telephonic Interview
February 8, 2006 at 11:00 AM EST

U.S. Patent Application No. 09/903,028
N&R Reference: 05145.0009U1
Previous Reference: 07816.105003

AGENDA

**FOR GENERAL DISCUSSION PURPOSES
ONLY**

- 1) Discuss the Claim Limitations (Original Claim 1 and Proposed Claim 12 with emphasis added)
Claim 1 - A method for processing an image, comprising the steps of:
 - a) comparing a first image intensity associated with a subject image portion with a second image intensity associated with an adjacent image portion;
 - b) determining an image intensity difference between the first image intensity and the second image intensity;
 - c) classifying the subject image portion as a *candidate edge portion* in response to a determination that the first image intensity is less than the second image intensity and a determination that the image intensity difference is greater than a predetermined threshold image intensity difference;
 - d) determining whether the candidate edge portion is a *true edge portion*; and
 - e) associating the subject image portion with a *third image intensity*, wherein the third image intensity is less than the first image intensity.

Proposed Claim 12 - A system for enhancing a digitized image, comprising:

- a) a decoder operative to receive an encoded digitized image and to expand the encoded digitized image to generate a decoded digitized image;
- b) a post-processing unit operative to generate a processed image by filtering the decoded digitized image ~~to process an image flaw; and~~
- c) an edge enhancer operative to detect an edge in the processed ~~decoded digitized~~ image to enhance the edge in the processed ~~decoded digitized~~ image.

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- 2) Discuss the 35 U.S.C. 102 Rejections
 - a) Anticipation only exists if reference teaches every claim element (2131)
 - b) **IEEE article by Scognamiglio et al. (“Sconamiglio”) – Sconamiglio does not disclose a decoder operative to receive an encoded digitized image and to expand the encoded digitized image to generate a decoded digitized image; a post-processing unit operative to generate a processed image by filtering the decoded digitized image; and an edge enhancer operative to detect an edge in the processed image to enhance the edge in the processed image.**
 - i) On page 681, Figure 3 has a box labeled enhancement of thin lines that precedes the IIR low pass filter. This is confirmed by the following language on page 683: “From Fig. 3, it can be noticed that the final value of the horizontal control function c_x is obtained by a spatial low-pass filtering...”
- 3) Discuss the 35 U.S.C. 103 Rejections to Claim 1 and Claim 18
 - a) Legal basis for obviousness not satisfied
 - i) 3 Requirements – must be some suggestion/motivation in references or knowledge to combine or modify the references; a reasonable expectation of success; and teach and suggest all of the claim limitations.

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- b) *Prima Facie* case for obviousness is not met by U.S. Patent 5,850,294 (“Apostolopoulos”) in view of U.S. Patent No. 5,418,574 (Miyabata) and further in view of U.S. Patent No. 5,844,614 (“Chong”)
- i) Apostolopoulos is a method that “smooths the non-edge pixels within blocks containing edge pixels without smoothing the edge pixels. Also, distortion-induced false edge pixels are distinguished from true edge pixels and heavily smoothed to ensure that they do not degrade the post-processed image.” (See col. 4, line 59-65) Emphasis added.
- (1) As stated in 7c2’, Apostolopoulos *teaches away* from filtering edge pixels. Therefore it cannot suggest edge enhancement.
- (2) Moreover, this patent “ is a method and system in which post-processing reduces visual artifacts, such as blocking artifacts and mosquito noise, through separate detection, mapping and smoothing operations while avoiding many of the complexities associated with existing techniques.” See (col. 4, lines 50-55).
- (a) Blocking effects are due to discontinuities in the reconstructed signal’s characteristics across block boundaries for a block-based coding system, e.g., Block DCT. (See column 3, lines 18-20) Emphasis added.
- (b) Mosquito noise is typically seen when there is a sharp edge, e.g., an edge within a block separating two uniform but distinct regions. (See column 3, lines 29-31).
- ii) Miyabata’s goal is “to provide a video signal correction apparatus capable of improving correction of color bleeding in images, and of suppressing image deterioration during such correction.” (See col. 2, lines 26—30) Emphasis added.
- (1) Miyabata only corrects for color bleeds and does not enhance an edge.

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- iii) According to Chong, the “**ringing noise** removing apparatus of the present invention is capable of maintaining the reconstructed video sharpness while removing the **ringing noise** effect from the reconstructed video by detecting the sources causing such noise and applying an adaptive filter to the detected areas.” (See col. 1, lines 7-12) Emphasis added.
- (1) “Furthermore, in order to compress more bits, the quantization parameters are designed to preserve the low frequency coefficients at the upper left corner of the block of 8x8 pixel, this design will cause more errors to be generated for an edge block when the edge block is decoded by the decoder. The error will cause a **ringing effect** (corona effect) **appearing around the edge of the reconstructed block**. This effect causes a noise component in the high frequency area of the decoded video signal, and such noise is referred to as a “ringing noise.” (See col. 2, lines 29-38) Emphasis added.
- (2) Chong deals with artificial edges created when a block is reconstructed, as indicated above, and does not involve enhancing a true image edges as recited in the claims.
- c) Because Apostolopoulos, Miyabata, and Chong neither jointly disclose nor jointly suggest all the in recited claims, these claims cannot be obvious in view of those patents.
- 2) Discuss Proposed Claim 1 in light of above remarks
- 3) Discuss the strategy for resolving the case